THE AARON DIAMOND AIDS RESEARCH CENTER

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Dr. Elias A. Zerhouni
Director
National Institutes of Health
9000 Rockville Pike
Bethesda, MD 20892

Dr. Mark Rohrbaugh
Director of the Office of Technology Transfer
Office of Intramural Research
National Institutes of Health
6011 Executive Boulevard, Suite 325
Rockville, MD 20852

Dear Drs. Zerhouni and Rohrbaugh:

I am writing out of concern related to the issues raised in connection with the petition regarding Abbott Laboratories and the exercise of march-in rights under the Bayh Dole Act. As an independent researcher at the Aaron Diamond AIDS Research Center in New York, I began collaborating with Abbott Laboratories in 1991 and was one of the investigators working on the testing of protease inhibitors for safety and efficacy throughout all the phases of clinical development. While I do not wish to express any legal opinion with respect to provisions of Bayh Dole, I do think it important for those faced with rendering a decision on this petition to recall both the circumstances and the climate related to the discovery of protease inhibitors in general, and Norvir in particular.

First, it is valuable to put the development of protease inhibitors in their historical context by recalling the early days of the HIV epidemic. Quite simply, large numbers of people were dying painful deaths at an alarming rate after an AIDS diagnosis. Treatment options were limited to a few medications that simply were not potent enough to make an impact on the mortality rates at the time, and the demand for new treatments was intense. For researchers and for the pharmaceutical industry, the task of finding these new treatments represented an enormous investment and a significant gamble. For example, during my work on Abbott's protease inhibitors, it was determined that one such compound showed promise, but later was found not to work well enough when tested in patients. Another looked more promising, but again when tested in patients; it fell short in its efficacy. While the literature reflected great excitement about the promise of protease inhibitors in 1994 and 1995, in 1993 nothing about their efficacy was certain.

When protease inhibitors were being investigated, there was no way to know if they would work – and even if they did work - we weren't yet sure how they could be used. It involved a great deal of trial and error to reach the point where experimental discoveries such as protease inhibitors actually became useful drugs. In today's environment, it is easy to forget what those days were like. The grim treatment options of the early days contrast with today's array of effective therapies because of the advances made in therapeutics over the last 15 years.

I think it particularly important at this point to draw some emphasis as well to the role that the National Institutes of Health played at the time when it awarded grants to assist in protease inhibitor research efforts. Abbott was a recipient of such a grant. However, when it came to the actual clinical testing of protease inhibitors, the development of Norvir was accomplished through the investment of the company and through the institutional resources of investigators such as myself. The amount of money used in discovery is but a fraction of the sum spent to fully develop a drug for market. The discovery may have been subsidized, but the testing and development were not.

After Abbott tested various molecules, Norvir emerged as its most effective compound. Once Norvir was introduced into infected subjects during clinical trials, we saw a reduction in viral load that was unprecedented and it then seemed logical to combine this with 3TC and AZT. The eventual result is the very different AIDS epidemic that still challenges us today, though in a vastly different way. Mortality dropped significantly. Lives were extended. Quality of life was vastly improved. Eventually, Norvir's role as a boosting agent to other anti-viral therapies became known, extending the benefit of its role beyond what was conceived during its initial use.

The development of Norvir is a prime example of the benefits of a public-private partnership. The investment in discovery on the part of the National Institutes of Health - and Abbott itself - was followed up by the much more significant investment by private industry to test and develop the discovery and bring it to market.

As a witness of this development, I felt compelled to write and share this perspective with you. If you have any follow-up questions, please do not hesitate to contact me.

Sincerely,

David D. Ho

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